PART I: GENERAL INFORMATION   Last Updated: November 26, 2003

Name: Sharon-Lise Teresa Normand

Office Address: Harvard Medical School
Department of Health Care Policy
180 Longwood Avenue, Suite 302
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Education

Ph.D.	Biostatistics	University of Toronto
M.Sc.	Statistics	University of Western Ontario
B.Sc.(Honors)	Statistics	University of Western Ontario

Postdoctoral Training

Department of Health Care Policy, Harvard Medical School

Academic Appointments

2003–	Affiliate, Center for Basic Research in the Social Sciences, Faculty of Arts and Sciences, Harvard University
1998–	Associate Professor, Department of Biostatistics, Harvard School of Public Health
1998–	Associate Professor of Biostatistics, Department of Health Care Policy, Harvard Medical School
1995–1998	Assistant Professor, Department of Biostatistics, Harvard School of Public Health
1992–1998	Assistant Professor of Biostatistics, Department of Health Care Policy, Harvard Medical School

Major Harvard Committee Assignments

Harvard University

2000–2003	Standing Committee on the Degree of Doctor of Philosophy in Health Policy, Harvard University
1999–2001	Admissions Committee, Health Policy Ph.D. Program, Harvard University
1997–	Evaluation & Statistics Committee, Ph.D. in Health Policy Program, Harvard University

Harvard School of Public Health

2003-2004	Degree Program Committee, Department of Biostatistics
2002–2003	Chair, Seminar Committee, Department of Biostatistics
2001–2002	Student Interview Committee, Department of Biostatistics
2000–2001	Postdoctoral Committee, Department of Biostatistics
1999–2000	Practical Training Committee, Department of Biostatistics
1997–1999	Seminar Committee, Department of Biostatistics
1996–1997	Computing Committee, Department of Biostatistics

1995–1998   Curriculum Committee, Department of Biostatistics

Harvard Medical School
1996–2001   Statistics Faculty Search Committee, Department of Health Care Policy
1996–1997   MD Faculty Search Committee, Department of Health Care Policy
1995,1998   Statistics Postdoctoral Search Committee, Department of Health Care Policy

Major Regional and National Committee Assignments

Regional

2002-   Director, Massachusetts Data Analysis Center, Commonwealth of Massachusetts
2000–   Member, Massachusetts Cardiac Care Quality Advisory Commission, Commonwealth of Massachusetts
1995–1996   Board of Directors, New England Quality Council, Inc

National

2004   Member, Distinguished Student Paper Awards Committee
2003-2007   Member, Circulatory Systems Devices Advisory Panel, Food and Drug Administration, US Department of Health and Human Services
2003   Consultant, Circulatory Systems Devices Advisory Panel, Food and Drug Administration, US Department of Health and Human Services
2003–2005   Secretary, Eastern North American Region (ENAR) of the International Biometrics Society
2003–2004   Health Policy Statistics Section Chair Elect (2003) and Chair (2004), American Statistical Association
2003   Study Review Panel Member, National Institute for Mental Health
2002–2005   Subcommittee on Standards for NCDR Scientific and Clinical Support Member, American College of Cardiology
2002 –   Technical Expert Panel Member, Centers for Medicaid and Medicare Services Doctor's Office Quality Project
2002   Special Emphasis Panel (Statistics) Chairperson, Review Panel, National Institute for Mental Health
2002   Small Business Innovation Research Temporary Review Member, National Institute for Mental Health
2001–2002   Heart Failure GAP Project Advisory Panel Member, American College of Cardiology & American Heart Association
2000–2004   3rd , 4th , & 5th Scientific Forums on Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke Program Committee Member, American Heart Association
2000–2001   Health Policy Statistics Section, Program Chair (2001); Chair-Elect (2000), American Statistical Association
2000–2005   Heart Failure Performance Measures Writing Group Member, American College of Cardiology & the American Heart Association
2000–2005   Joint Task Force on Performance Measures Member, American College of Cardiology & the American Heart Association
2000–2001   Quality of Care and Outcomes Research Expert Panel Member, American Heart Association
2000   Scientific Program Committee Member, ENAR

1999–2001   Health Care Technology & Decision Sciences Review Committee Member, Agency for Healthcare Policy and Research

1998–2001   Patient Care and Outcomes Review Group Committee Member, American Heart Association

1998–2000   Regional Advisory Board Member, ENAR

1998–1999   Cardiovascular Outcomes Research Conference – Working Group Member, American Heart Association

1997–2000   Health Services Research Initial Review Group Committee Reserve Member, Agency for Health Care Policy and Research

1996   Small Project Grant Program Review Member, Agency for Health Care Policy and Research

1994–1996   Behavioral Science Track Award for Rapid Transition Program Review Member, National Institute of Mental Health

1992   Statistics and Probability Section Review Member, National Science Foundation Program

Professional Societies

2002–   American College of Cardiology
2000–   American Public Health Association
1999–   Society for Clinical Trials
1992–   Association for Health Services Research
1990–   American Statistical Association
1990–   Institute of Mathematical Statistics
1990   International Biometric Society
1987–   Statistical Society of Canada
1987–   Royal Statistical Society

Community Service Related to Professional Work

2001   External Examiner, University of Toronto, School of Graduate Studies, Multiple Imputation of Missing Data in Clinical Trials (Biostatistics).

1996, 2000   ENAR Session Organizer (Design & Analysis of Medical Device Trials: Regulatory, Industry, Statistical, and Clinical Perspectives (2000); Statistical Methods for Measuring, Assessing, and Modeling Compliance (1996))

1995–2003   Scientific Program Committee Member, International Conference on Health Policy Research (Bi-annual Meeting), Health Policy Statistics Section, American Statistical Association

1993–2001   JSM Session Organizer, American Statistical Association (IRT Modeling: Applications to Health Policy (2001); Statistical Methods for Profiling Medical Providers (1999); Modern Methods for Incorporating Uncertainty in Health Policy Analyses (1997); Statistical Methods in Mental Health Services Research (1995); Bayesian Methods in Health Services Research (1993))

1985–1990   Junior Statistical Consultant, Clinical Research Support Unit, Department of Preventive Medicine & Biostatistics, University of Toronto

Editorial Boards

Board Member

2002–2004	Member	Medical Decision Making
2000	Guest Editor	Special Issue of Health Services and Outcomes Research Methodology
1998–	Member	Health Services and Outcomes Research Methodology

Reviewer

American Journal of Public Health
Bayesian Statistics 4 & 5
Biometrics
Communication in Statistics: Theory & Methods
Health Risk Analysis
Health Services Research
International Journal for Quality in Health Care
Joint Commission Journal of Quality Improvement
Journal of the American Academy of Child & Adolescent Psychiatry
Journal of the American Statistical Association
Journal of Clinical Outcomes Management
Journal d'Economie Medicale (France)
Journal of Health Economics
Journal of Multivariate Analysis
Life Time Data Analysis
Medical Care
Milbank Quarterly
New England Journal of Medicine
Science
Sociological Methods and Research
Statistical Science
Statistics in Medicine

Awards and Honors

Fellow, American Statistical Association
Fellow, American College of Cardiology
National Science Foundation: Young Researcher Award, Support for the 4th Valencia International Meeting on Bayesian Statistics USA
Life Sciences Graduate Degree Completion Scholarship, University of Toronto, Toronto, Ontario CANADA
Life Sciences Committee Scholarship in Cancer Research, University of Toronto, Toronto, Ontario CANADA
Ontario Graduate Scholarship, University of Toronto, CANADA
Special University Scholarship, Faculty of Graduate Studies, University of Western Ontario, London, Ontario CANADA
Entrance Scholarship, Faculty of Graduate Studies, University of Western Ontario, London, Ontario CANADA
University Gold Medal in Mathematical Statistics, University of Western Ontario, London, Ontario CANADA

PART II: RESEARCH, TEACHING, AND CLINICAL CONTRIBUTIONS

Dr. Normand's methodologic research focuses on the development of statistical methods for health services and outcomes research, primarily using Bayesian approaches to problem solving, including assessment of quality of care, medical guideline construction, provider profiling, meta-analysis, causal inference for observational data, and evaluation of medical devices. Dr. Normand has developed a long line of research on methods for the analysis of patterns of treatment and quality of care for patients with cardiovascular disease and with mental disorders.

Dr. Normand's work in the area of profiling medical care providers involves developing analytic methods for comparing providers using outcomes and process-based measures, and for determining the appropriate unit of analysis in the presence of clustering, e.g., health plan-level analysis or physician-level analysis. She is applying these methods using data from patients with cardiac disease and mental health. She is collaborating in the latter area with the Department of Veterans Affairs to evaluate several dimensions of inpatient and outpatient mental health and substance abuse care. Dr. Normand is applying and extending the class of multidimensional hierarchical mixed (discrete and continuous) response models to examine the issue of quality in the observational setting. While many investigators have focused on estimation of regression parameters, she is developing methods to examine functions of the cluster-specific parameters. As a consequence of her leadership in the development of methods for profiling, Dr. Normand is the Director of Mass-DAC, the data coordinating center responsible for collecting, analyzing, and reporting on the quality of care received by adults discharged following a cardiac procedure from all hospital programs in Massachusetts. She will profile hospitals as well as physicians using chart-based data collected by hospital personnel.

To compliment this work, Dr. Normand and colleagues from the Department of Psychiatry have embarked on an NIMH-funded study to develop and compare client self-reported clinical and functional mental health status measures across an array of inpatient and outpatient mental health and substance abuse service delivery sites across the U.S. They will use item response theory models to develop an instrument to measure functional mental health status.   Using matching estimators from observational data, she will evaluate the effect of the introduction of mental health parity on use, cost, and quality of services. She is also collaborating in a systemic comparison of the structure, processes, and outcomes of treatment for patients disabled by schizophrenia in managed and non-managed health care plans in Massachusetts.

Dr. Normand is collaborating on several methodological projects. She is developing methods, using formal elicitation as well as regression techniques in order to construct price indexes in the area of mental health. She is the head of the Statistical Core for an AHRQ-funded program project to examine the impact of competition on health outcomes. She is leading the effort to examine the appropriateness of the assumptions in making causal inference using pre-post observational data. Lastly, Dr. Normand and colleagues are extending and applying methods for making causal inference in both the experimental and observational settings using propensity scores and instrumental variables techniques. This research, sponsored by NIMH, will be applied in the area of mental illness in order to learn about the effectiveness of treatments for major depression and for schizophrenia.

An important aspect of Dr. Normand's academic contributions is in the area of training. Her teaching activities included the development and instruction of courses on: multiple regression for the School of Public Health's Health Policy and Management students; Bayesian Methods for Biostatistics to graduate students in the Department of Biostatistics; and Statistical Methods for Psychiatry for Biostatistics and Epidemiology in the School. In addition to these activities, Dr. Normand has supervised seven statistics postdoctoral fellows, one economics fellow, two graduate students in the area of outcomes research, and three graduate students in psychiatric epidemiology. The Committee on Educational Policy

at the Harvard School of Public Health has recognized Dr. Normand for outstanding teaching in 1999 (Statistical Methods for Psychiatry), 2000 (Statistical Outreach), and 2001 (Multiple Regression Analysis for Health Policy and Management).

Funding Information

2003–2008	P20 [No Award # Yet] (PI: McGuire) NCMHD, Co-Investigator. Exploratory EXPORT Center: Bridging Communities.
2003–2006	R01 HS13335-01A1 (PI: Epstein) AHRQ, Co-Investigator. The Patterns and Impact of Value-Based Purchasing.
2003–2006	R01 MH54693 (PI: Laird) NIMH, Co-Investigator. Analysis of Multiple Informant Data in Psychiatry.
2002–2005	NO1 AA21011 (PI: Colditz) NIAA, Co-Investigator. Estimating Alcohol Attributable Fractions of US Morbidity and Mortality Based on Meta-Analyses of Epidemiological Studies.
2002–2007	--- (PI: Normand) --- Cardiac Surgery Study.
2002–2003	(PI: --), Co-Principal Investigator. Sample Sizes in Performance Measurement.
2001–2004	R01 MH61434 (PI: Normand) NIMH, Principal Investigator. Modeling Treatment Use & Effectiveness in Mental Illness.
2001–2004	R01 HS11651 (PI: Landon) AHRQ, Co-Investigator/Senior Statistician. MD Group Characteristics and Quality of Care for CHD.
2000–2005	P01 HS10803 (PI: Newhouse) AHRQ, Co-Investigator/Senior Statistician. Structuring Markets and Competition in Health Care.
2000–2003	HHS 100-00-0025 (PI: Frank) DHHS, Co-Investigator/Senior Statistician. Evaluation of Parity in the Federal Employees Health Benefits (FEHB) Program.
2000–2003	R01 MH620282 (PI: Frank) NIMH, Co-Investigator/Senior Statistician. Price Indexes of Mental Health Treatment.
1999–2003	R01 MH58240 (PI: Normand) NIMH, subcontract to McLean Hospital, Principal Investigator. BASIS 32: A Consumer Mental Health Outcome Measure.
1998–2005	NO1 MH80001 (PI: Frank) NIMH, Senior Statistician. Treatment for bipolar disorder.
1998–2002	R01 MH58288 (PI: Normand) NIMH: subcontract to McLean Hospital, Belmont, MA, Research: Principal Investigator. Mental illness, co-morbidity, and mortality.
1998–2001	NIMH (PI: Normand), NIMH, subcontract to University of Massachusetts Medical Center: Principal Investigator. Managed care effects on arrest and forensic commitment.
1998–2001	AHCPR (PI: McNeil), Co-Investigator/Senior Statistician. Financial incentives and care of chronic cardiac patients.
1998–2001	AAHP (PI: McNeil), Co-Investigator/Senior Statistician. Financial incentives and care of chronic cardiac patients.
1998–2000	NCI (PI: Guadagnoli), Co-Investigator/Senior Statistician. Data sources and patterns of care for breast cancer.
1998	---(PI: ---), Co-Investigator/Senior Statistician. Understanding the use of cholesterol lowering agents after myocardial infarction.
1997–2002	R01 MH54076 (PI: Dickey) NIMH, Co-Investigator/Senior Statistician. Outcomes of Medicaid managed care.
1997–1999	--(PI: ---), Co-Investigator/Senior Statistician. Use of cholesterol lowering agents as secondary prevention after acute myocardial infarction.

1997–1999	--- (PI: ---), Co-Investigator/Senior Statistician. Determining the value of mental health.
1996–2001	U18 HS09487 (PI: McNeil) AHCPR, Co-Investigator/Senior Statistician. Quality of care measures for cardiovascular patients.
1996–2001	SAMHSA (PI: Frank): subcontract to Brandeis University, Co-Investigator/Senior Statistician. State substance abuse treatment managed care evaluation program.
1996–1999	AHCPR (PI: Guadagnoli): subcontract to Boston University, Co-Investigator/Senior Statistician. Adjuvant tamoxifen in old age.
1995–1998	NIMH (PI: Dickey), Co-Investigator/Senior Statistician. Regional variation in mental health treatment and cost.
1995–1997	--- – Institutional Participation Agreement (PI: ---), Co-Investigator/Senior Statistician. Appropriateness and necessity of cardiac procedure use after AMI in -.
1995–1997	--- – Institutional Participation Agreement (PI: ---), Co-Investigator/Senior Statistician. Social factors & cardiac outcomes: A prospective study.
1994–1999	AHCPR (PI: McNeil), Co-Investigator/Senior Statistician. Validating guidelines for the care of AMI patients.
1993–1997	NCI (PI: Normand), Principal Investigator. Hierarchical modeling for assessing breast cancer care.
1993–1994	HCFA (PI: McNeil): subcontract to Duke Medical School, Co-Investigator/Senior Statistician. Analysis of the pilot Cooperative Cardiovascular Project data.
1992–1995	AHCPR (PI: Morris), Co-Investigator. Hierarchical statistical modeling in health policy research.
1992–1995	--- – Institutional Participation Agreement (PI: ---), Co-Investigator/Senior Statistician. The consequences of variation in treatment after AMI in ---.
1992–1994	AHCPR (PI: Epstein), Co-Investigator/Senior Statistician. Do re-admissions matter?
1992–1993	AHCPR (PI: McNeil), Co-Investigator/Statistician. The consequences of variation in treatment for acute MI.
1990–1994	AHCPR (PI: McNeil), Co-Investigator/Statistician. The consequences of variation in treatment for acute MI.

Report of Teaching

<u>Local Contributions</u>

2001–2003	Bayesian Methodology in Biostatistics (BIO249ab), Course Developer & Instructor, 15 Students, Preparation Time = 3 hr/wk, Contact Time = 5 hrs/wk.
2000–2003	Fundamental Methods of Clinical Trials, Scholars in Clinical Science Program, HMS, Guest Lecturer, 10 Students.
1998–2001	Multiple Regression Analysis for Health Policy and Management (BIO225c), Department of Biostatistics, HSPH, Course Developer and Instructor, 25 Students, Preparation Time=1 hr/wk, Contact Time=4 hrs/ wk.
1998–1999	Statistical Outreach (BIO270), Course Developer and Instructor (with LJ Wei and M Zelen), 6 Students, Preparation Time=5 hrs/wk, Contact Time=2 hrs/wk.
1997–2002	Core Seminar in Health Policy (HCP597), Harvard University (Harvard Medical School, Kennedy School of Government, Harvard School of Public Health), Guest Lecturer, 20 Students.

1997–1998	Statistical Methods for Psychiatry (BIO269), Department of Biostatistics, Harvard School of Public Health, Course Developer and Instructor, 7 Students, Preparation Time=0.5 hrs/wk, Contact Time=4 hrs/wk.
1997	Psychiatric Epidemiology, Department of Epidemiology and Department of Biostatistics, HSPH, Participant in Training Program, 3-8 Students, Preparation Time=0.5 hrs/wk, Contact Time=0.5 hrs/wk.
1996	Statistical Methods for Health Care Utilization Data (BIO300), Department of Biostatistics, HSPH, Course Developer and Instructor, 1 Student, Preparation Time=0.1 hr/wk, Contact Time=2 hr/wk.
1995–1998	Bayesian Methodology Working Group, Department of Biostatistics, HSPH, Seminar Coordinator, 10 Students, Preparation Time=0.5 hrs/wk, Contact Time=1 hr/wk.
1995	Sources of Biases in Estimating Diagnostic Accuracy (BIO300), Department of Biostatistics, HSPH, Course Developer and Instructor, 1 Student, Preparation Time=1 hr/wk, Contact Time=2 hrs/wk.
1995	Statistical Issues in Assessing Diagnostic Accuracy with Applications in Psychiatric Epidemiology (BIO300), Department of Biostatistics, HSPH, Course Developer and Instructor, 1 Student, Prep Time=1 hr/wk, Contact Time=2 hrs/wk.

Graduate and Postdoctoral Students

Proprietary information has been deleted.

Undergraduate and High School Mentoring

Proprietary information has been deleted.

Selected Regional, National, or International Contributions: Invited Presentations (since 2000)

1. Statistical Models for Health Care Quality Surveillance and Public Reporting. Department of Epidemiology and Biostatistics, Casewestern Reserve University, Cleveland, OH. (2003).

2. Hierarchical Models and Latent Variable Models: Methods for Assessing Multiple Measures of Quality and Outcomes of Care. International Conference on Health Policy Research, Chicago, IL. (2003)

3. Statistical Models for Monitoring/Surveillance and Public Reporting. Joint Statistical Meetings, San Francisco, CA. (2003)

4. Measuring Quality. American College of Radiology Forum: The Future Quality of Medical Imaging, Reston, VA. (2003)

5. Use and Abuse of Observational Data for QI. 4th Annual ACC Quality Conference and NCDR User Meeting, Chicago, IL. (2003)

6. Some Statistical Issues in Profiling Providers: Cross-Sectional Univariate and Multivariate Outcome Measures. Department of Economics, University of Bristol, UK. (2002)

7. On the Use of Propensity Scores in Medical Decision and Policy Making. Society for Medical Decision Making 24th Annual Meeting, Keynote Dinner Speaker, Baltimore, MD. (2002)

8. Sample Size Considerations in Observational Health Care Quality Studies. CREDES (Research and Information Center for Health Economics), Paris, France. (2002)

9. Analytic Methods for Meta-Analysis. INSERM (French Institute of Health and Medical Research), La Roche-Posay, France. (2002)

10. Statistical Approaches to Profiling Providers of Medical Care. International Health Economics Conference, Hong Kong University of Science and Technology. (2002)

11. Unruly Control Groups: Determining the Appropriateness of Quasi-Experimental Estimators. National Institute of Mental Health Evidence in Mental Health Services Research: What Types, How Much, and Then What? Washington, DC. (2002)

12. Statistical Approaches to Profiling Providers. Yale Medical School, New Haven, CT. (2002)

13. On The Design and Analysis of Health Care Quality Studies: Assessing Chronic Cardiovascular Care in the US. American Statistical Association Annual Meetings, Atlanta, GA. (2001)

14. Models for Profiling Medical Care Providers. Academy for Health Services Research and Health Policy Meetings, Atlanta, GA. (2001)

15. Maryland Health Choice. Academy for Health Services Research and Health Policy Meetings, Atlanta, GA. (2001)

16. Statistical Considerations for Profiling Providers of Medical Care. Keynote Speaker, Department of Health Administration, University of Toronto, Toronto, Canada. (2001)

17. Validating Recommendations for Coronary Angiography Following Acute Myocardial Infarction in the Elderly: A Matched Analysis Using Propensity Scores. Institute for Clinical Evaluative Sciences, Sunnybrook Hospital, Toronto, Canada. (2001)

18. Propensity Scores: Economic, Epidemiological, and Statistical Perspectives, Panel Moderator. 6th Annual International Meeting of the International Society for Pharmacoeconomics and Outcomes Research(ISPOR), Arlington, VA. (2001)

19. Sample Size Determination in Hierarchical Models: An Application to Quality Assessment Studies. Conference on Statistics and Health, Department of Mathematical Sciences, University of Alberta, Edmonton, Alberta, Canada. (2000)

20. Risk Adjustment for Procedures: The Basics. 2nd Scientific Forum on Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke, American Heart Association & the American College of Cardiology, Washington, DC. (2000)

21. Risk Adjustment: Advanced Concepts. 2nd Scientific Forum on Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke, American Heart Association & the American College of Cardiology, Washington, DC. (2000)

22. On the Use of Prior Information in Medical Device Trials: Methods & Applications. Food and Drug Administration, Rockville, MD. (2000)

23. Analyzing Observational Data Using Propensity Scores: Applications in Health Services Research. Statistics Colloquium, Department of Mathematics and Statistics, Boston University, MA. (2000)

24. Analyzing Observational Data Using Propensity Scores: Applications in Health Services Research. Biostatistics Colloquium, Department of Biostatistics, Harvard School of Public Health, Boston, MA. (2000)

25. Comparing Systems of Health Care: Does the Veterans Health Administration Measure Up? Health Care Policy Advisory Council, Harvard Medical School, Boston, MA. (2000)

26. On the Use of Propensity Scores in Health Services Outcomes Research. Techniques for Handling Bias in Health Services Outcomes Research, National Conference, Houston, TX. (2000)

27. Statistical Methods for Adjusting Differences Due to Self-selection into Health Plans. American Public Health Association 128th Annual Meeting, Boston, MA. (2000)

Professional Leadership Roles Related to Teaching

Oct 2003   Workshop Instructor, International Conference on Health Policy Research, Chicago, IL. Introduction to Statistical Methods for Profiling. Provided an introduction to regression-based methods for comparing providers on the basis of observational data.

Oct 2003   Workshop Instructor, Lister Hill Center for Health Policy, University of Alabama at Birmingham, AL. Introduction to Statistical Methods for Profiling. Provided an introduction to regression-based methods for comparing providers on the basis of observational data.

Aug 2003   Workshop Instructor, Measurement, Design and Analysis Methods for Health Outcomes Research, Harvard School of Public Health, Boston, MA. Using Hierarchical Models.

June 2003   Workshop Instructor, Academy for Health Services Research and Health Policy, Nashville, TN. Introduction to Statistical Methods for Profiling. Provided a review of methods of comparing providers and described regression-based methods using hierarchical models.

Nov 2002   Cyber-Workshop Instructor, Academy for Health Services Research and Health Policy, Washington, DC. Introduction to Hierarchical Models for Health Services Research. Provided an introduction to hierarchical models with applications to services research.

Oct 2002	Workshop Instructor, 4th Scientific Forum on Quality and Outcomes Research in Cardiovascular Disease and Stroke, American Heart Association and the American College of Cardiology, Washington, DC. Introduction to Hierarchical Modeling for Cardiovascular Services Research.
June 2002	Workshop Instructor, Academy for Health Services Research and Health Policy, Washington, DC. Introduction to Hierarchical Models for Health Services Research. Provided an introduction to hierarchical models with applications to services research.
June 2001	Keynote Instructor, International Conference on Information Technology Interfaces ITI 2001, Croatia School of Biometrics. Provide an overview of methods for making inferences with observational data including regression-adjustment and propensity score adjustment with applications in health services research.
March 1998	Advisory Council Meeting on Methodological Issues in Diagnostic Clinical Trials: Health Services and Outcomes Research in Radiology. Sponsored by the US Public Health Service's Office on Women's Health and the National Cancer Institute, Washington, DC. Provided advice regarding the difficulties in assessing the appropriateness of diagnostic tests.
Dec 1997	Workshop Instructor, Multilevel Hierarchical Regression Models. 1997 International Conference on Health Policy Research, Washington, DC. Provided an overview on applying complex statistical models to the analysis of health services data to help inform policy makers.
June 1993	Workshop Instructor, Association for Health Services Research and Foundation for Health Services Research Methods Workshop on Hierarchical Statistical Methods for Health Policy, Washington, DC. Provided an overview on applying complex statistical models to the analysis of health services data to help inform policy makers.

PART III: BIBLIOGRAPHY

Standard Journal Articles

1. Egan TM, Herman SJ, Doucette EJ, **Normand SL**, McLeod RS. A randomized, controlled trial to determine effectiveness of fascial infiltration of bupivacaine in preventing respiratory complications after elective abdominal surgery. *Surgery* 1988;104(4):734-740.

2. Brasher P, Hogg-Johnson S, **Normand SL**. Analysis of the Lake Couchiching data. Canadian Journal of Statistics 1990;18(4)377-382.

3. Morris CN, **Normand SL**. Hierarchical models for combining information and for meta-analysis with discussion. In: Bernardo JM, Berger JO, Dawid AP, Smith AFM, editors. Bayesian Statistics 4. Oxford: Clarendon Press, 1992:321-44.

4. **Normand SL**, Tritchler D. Parameter updating in a Bayes network. Journal of the American Statistical Association 1992;87(420):1109-1115.

5. Gatsonis C, **Normand SL**, Liu CH, Morris C. Geographic variation of procedure utilization – A Hierarchical Model Approach. Medical Care 1993; 31(5):YS54-YS59.

6. Pashos CL, **Normand SLT**, Garfinkle JB, Newhouse JP, Epstein AM, McNeil BJ. Trends in

the use of drug therapies in patients with acute myocardial infarction – 1988 to 1992. Journal of the American College of Cardiology 1994; 23(5):1023-1030.

7.   Doksum KA, **Normand SL**. Gaussian models for degradation processes. Part I: Methods for the analysis of biomarker data. Lifetime Data Analysis 1995;1:131-144.

8.   Dickey B, Norton EC, **Normand SL**, Azeni H, Fisher W, Altaffer F. Massachusetts Medicaid managed health care reform: treatment for the psychiatrically disabled. Advances in Health Economics and Health Services 1995;15:99-116.

9.   Gatsonis CA, Epstein AM, Newhouse JP, **Normand SL**, McNeil BJ. Variations in the utilization of coronary angiography for elderly patients with an acute myocardial infarction – An analysis using hierarchical logistic regression. Medical Care 1995; 33(6):625-642.

10.   Lamas GA, Pashos CL, **Normand SLT**, McNeil BJ. Permanent pacemaker selection and subsequent survival in elderly Medicare pacemaker recipients. Circulation 1995; 91(4):1063-1069.

11.   Lenz FA, **Normand SL**, Kwan HC, Andrews D, Rowland LH, Jones MW, Seike M, Lin YC, Tasker RR, Dostrovsky JO, Lenz YE. Statistical prediction of the optional site for thalamotomy in Parkinsonian tremor. Movement Disorders 1995;10(3):318-328.

12.   **Normand SLT**, Morris CN, Fung KS, McNeil BJ, Epstein AM. Development and validation of a claims-based index for adjusting for risk of mortality – The case of acute myocardial infarction. Journal of Clinical Epidemiology 1995; 48(2):229-243.

13.   Dickey B, **Normand SLT**, Norton E, Azeni H, Fisher W, Altaffer F. Managing the care of schizophrenia: Lessons from a 4-year Massachusetts Medicaid Study. Archives of General Psychiatry 1996;53(10):945-952.

14.   Doksum K, **Normand SL**. Models for degradation processes and event times based on gaussian processes. In: Jewell NP, et al, editors. Proceedings of the 1994 Conference on Lifetime Data Models in Reliability and Survival Analysis. Kluwer Academic Publishers, 1996; 85-91.

15.   **Normand SLT**, Glickman ME, Sharma R, McNeil BJ. Using admission characteristics to predict short-term mortality from myocardial infarction in the elderly – Results from the Cooperative Cardiovascular Project. Journal of the American Medical Association 1996;275(17):1322-1328.

16.   **Normand SLT**, Glickman ME, Gatsonis CA. Statistical methods for profiling providers of medical care: Issues and applications. Journal of the American Statistical Association 1997; 92(439):803-814.

17.   **Normand SL**, Glickman ME, Ryan T. Modeling mortality rates for elderly heart attack patients: Profiling hospitals in the Cooperative Cardiovascular Project. In: Gatsonis C, Hodges J, Kass R, Singpurwalla N, editors. Case Studies in Bayesian Statistics. Springer-Verlag, 1997:155-236.

18.   Tu JV, Pashos CL, Naylor CD, Chen EL, **Normand SL**, Newhouse JP, McNeil BJ. Use of cardiac procedures and outcomes in elderly patients with myocardial infarction in the United States and Canada. New England Journal of Medicine 1997;336(21):1500-1505.

19.   Ayanian JZ, Landrum MB, **Normand SLT**, Guadagnoli E, McNeil BJ. Rating the appropriateness of coronary angiography – Do practicing physicians agree with an expert panel and with each other? New England Journal of Medicine 1998;338(26):1896-1904.

20.   Dickey B, **Normand SLT**, Norton EC, Azeni H, Fisher W. Treatment of long-term psychiatric disorders in the managed care environment – An observational longitudinal study. Clinical Drug Investigation 1998;15(4):303-308.

21.   Dickey B, Norton E, **Normand SL**, Azeni H, Fisher W. Managed Mental Health Experience in Massachusetts. In: Mechanic E editor. Managed Behavioral Health Care: Current Realities and Future Potential. Josey-Bass, 1998:115-22.

22.   **Normand SLT**, McNeil BJ, Peterson LE, Palmer RH. Methodology matters – VIII – Eliciting expert opinion using the Delphi technique: Identifying performance measures for cardiovascular disease. International Journal for Quality in Health Care 1998;10(3):247-260.

23.   Frank RG, McGuire TG, **Normand SLT**, Goldman HH. The value of mental health care at the system level: The case of treating depression. Health Affairs 1999; 18(5):71-88.

24.   Landrum MB, McNeil BJ, Silva L, **Normand SLT**. Understanding variability in physician ratings of the appropriateness of coronary angiography after acute myocardial infarction. Journal of Clinical Epidemiology 1999(4); 52:309-319.

25.   Landrum MB, **Normand SLT**. Applying Bayesian ideas to the development of medical guidelines. Statistics in Medicine 1999;18(2):117-137.

26.   **Normand SLT**. Meta-analysis: Formulating, evaluating, combining, and reporting. Statistics in Medicine 1999; 18(3):321-359.

27.   Petersen LA, Wright S, **Normand SLT**, Daley J. Positive predictive value of the diagnosis of acute myocardial infarction in an administrative database. Journal of General Internal Medicine 1999;14(9):555-558.

28.   Glickman ME, **Normand SLT**. The derivation of a latent threshold instrumental variables model. Statistica Sinica 2000; 10(2):517-544.

29.   Landrum MB, Bronskill SE, **Normand SL**. Analytic methods for constructing cross-sectional profiles of health care providers. Health Services & Outcomes Research Methodology 2000;1:23-48.

30.   Chertow GM, **Normand SLT**, Silva LR, McNeil BJ. Survival after acute myocardial infarction in patients with end-stage renal disease: Results from the Cooperative Cardiovascular Project. American Journal of Kidney Diseases 2000; 35(6):1044-1051.

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Dissertation

Proprietary information deleted.